

**State of Maine  
Multi-Agency Animal Crash Task Force**

**Summary  
of  
2004 Moose Collision Deterrents**



**Department of Transportation  
Department of Inland Fisheries and Wildlife  
Secretary of State  
Maine Turnpike Authority  
Department of Public Safety**

## **Introduction**

The intent of this report is to provide an annual reference source for State of Maine moose collision deterrent activities throughout Maine.

### **1.0 Summary of 2004 Activities**

#### **1.1 General Task Forces Initiatives**

The following public awareness initiatives were undertaken or continued in 2004.

- 1) A focused, statewide campaign begun in 2001 to make the public aware that moose crashes are likely to happen on any road in Maine and providing tips for drivers to avoid or lessen the severity of these crashes. This public information campaign was expanded in April 2004 to include a new brochure with safe driving tips distributed statewide to all towns, libraries, schools, state parks, tourism centers, and other distribution points.
- 2) News media alerts are distributed to all radio and TV stations and to newspapers throughout the state each spring, in time to alert the traveling public that May and June are the most dangerous months of the year for moose/vehicle collisions. In 2004, our efforts were publicized by statewide media outlets and picked up by other news outlets including the Washington Post, Chicago Tribune, and USA Today.
- 3) A module on large animal collisions continues to be part of driver education programs throughout the state, implemented by Department of Motor Vehicles. In addition, the task force produced a safety video in 2001 and distributed the video to all driver educators in Maine.
- 4) Increasing the number of available moose hunting permits in areas with severe/high crash locations. Other management practices are being examined to lower the potential of animal/vehicle crashes. (Implemented by Department of Inland Fisheries Wildlife)
- 5) Examining and testing measures to prevent collisions by either warning motorists or warning/excluding animals from roadsides. Some of these measures include alternative striping, reflectors, signs (with and without additional warning lights), and fencing.
- 6) Examining increased roadside clearing widths, to make moose visible from greater distances, allowing drivers more time to react and therefore prevent or lessen consequences of collisions.
- 7) Examining roadside vegetation management practices such as the composition of seed mixes and preventing sprouting of roadside woody plants, to eliminate choice food sources close to highways.
- 8) Examining habitat conditions, especially at historically high crash locations to determine if there is a way to predict where these animals will want to cross highways. This may help us choose appropriate prevention measures and install them in locations where they will be most effective.
- 9) Installing signs to alert the public at historically high-crash locations.
- 10) The publication "Collisions between Wildlife Species and Motor Vehicles in Maine" was developed. This report is a statistical review of reported motor vehicle crashes that involved animals in Maine during a five-year study period. It includes charts, graphs, listings and summaries categorizing crashes by animal type, county, severity, economic loss, month, time of day, light conditions, etc. The current edition reflects data from the study period 1999-2003 and is updated annually.

## 1.2 Regional Initiatives

### Aroostook County

Based on The Maine Department of Transportation's (MaineDOT) report titled *Collisions between Wildlife Species and Motor Vehicles in Maine 1999-2003*, the number of reported collisions in Aroostook County between vehicles and moose during the 5-year period from 1999-2003 totaled 1,090. The moose collision rate for Aroostook County has continued to remain high while other counties have decreased or stabilized since the mid-1990s. In comparison, the county with the second most reported collisions was Franklin County, with a total of 351. See Table 1. It is unclear at this time whether the high collision rate in Aroostook County is based on a larger population of moose in this region, the larger size of the County, the number of miles driven by the average person in the region, driver inattentiveness, roadside or topographical issues, all of which contribute to the high collision rate, or other factors. The likely answer is that it is a combination of factors. Various methods to deter moose collisions were utilized in Aroostook County in 2004.

**Table 1. Five-Year Total of Reported Maine Highway Moose Crashes by County, 1999-2003**

County	Five-Year Total
Androscoggin	65
Aroostook	1,090
Cumberland	158
Franklin	351
Hancock	71
Kennebec	113
Knox	31
Lincoln	25
Oxford	287
Penobscot	314
Piscataquis	178
Sagadahoc	15
Somerset	290
Waldo	31
Washington	162
York	184
<b>Total</b>	<b>3,365</b>

### Roadside Clearing

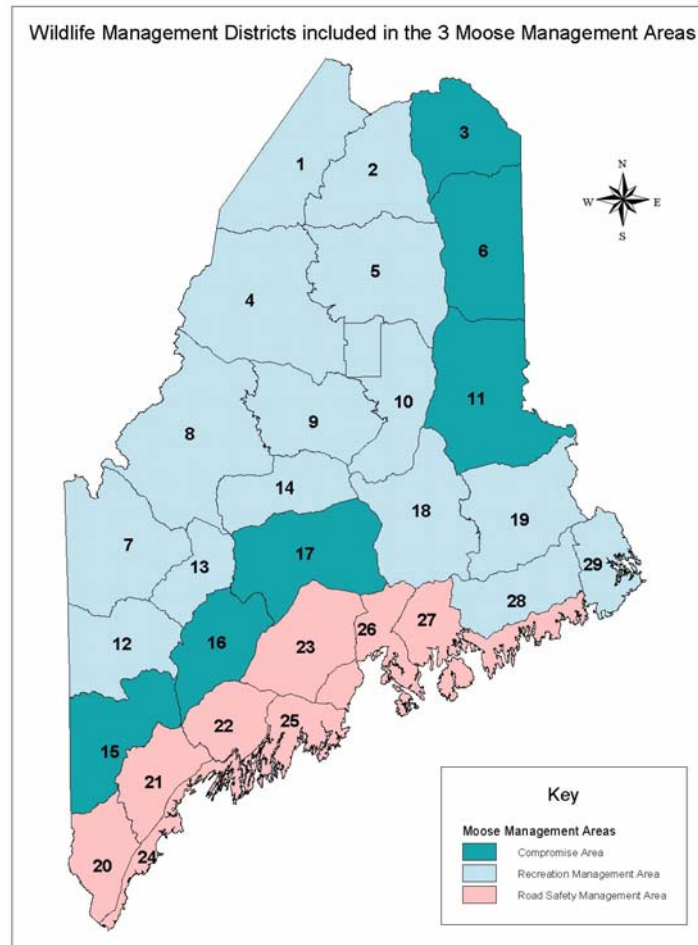
According to Galen Costigan, Manager of Region 5 Maintenance & Operations, roadside mowing was continued in 2004, especially along Rt. 1 between Van Buren and Madawaska, as well as Rt. 11 and along I-95, despite the fact that other regions were discontinuing the practice. This was done not only for maintenance reasons but also to address visibility concerns pertaining to moose collisions. However, no investigations into roadside seed mixes that discourage wildlife from roadsides were conducted in 2004.

### 2004 Moose Harvest

In response to some public concerns, the Maine Department of Inland Fisheries & Wildlife (MDIFW) increased the number of moose permits issued in 2004 in Wildlife Management Districts (WMD) 6 and 11, both of which

are located in Aroostook County (Figure 1). This was done to accelerate the Department's objective to reduce moose numbers in these WMDs. The permit allocations for 2003 and 2004 for WMDs 6 and 11 are compared below in Table 2. The 2004 moose harvest success rates for these districts are provided below in Table 3.

**Figure 1. MDIFW Wildlife Management Districts**



MDIFW will continue to manage Maine's moose population by attempting to balance the desire to reduce the incidence of moose-vehicle collisions in some areas of the State and the public's demand for recreational hunting and viewing opportunity. The WMD map illustrates MDIFW's statewide moose management objectives.

Each WMD was assigned to one of three moose management areas:

- **Recreation Management Area (RMA)**--(WMDs 1, 2, 4, 5, 7-10, 12-14, 18, 19, 28, 29)

Provide many moose for hunting and viewing.  
Maintain large, mature bulls.

- **Compromise Management Area (CMA)**--(WMDs 3, 6, 11, 15-17)  
Balance recreation and safety.  
Reduce moose population by 1/3.

Maintain large, mature bulls in some WMDs

- **Road Safety Management Area (RSMA)--(WMDs 20-27)**  
Reduce moose population to as low a number as possible to address safety concerns.

**Table 2. Comparison of Moose Hunting Permits Issued in 2004 with 2003**

WMD	2003 Permits			2004 Permits			Allocation of 2004 Permits					
	BOP	AOP	Total	BOP	AOP	Total	September			October		
							BOP	AOP	Total	BOP	AOP	Total
6	220	140	360	220	265	485	165	66	231	55	199	254
11	130	100	230	160	120	280	120	30	150	40	90	130
<b>Total</b>	<b>350</b>	<b>240</b>	<b>590</b>	<b>380</b>	<b>385</b>	<b>685</b>	<b>285</b>	<b>96</b>	<b>381</b>	<b>95</b>	<b>289</b>	<b>394</b>
BOP = Bulls Only Permit												
AOP = Antlerless Only Permit												

**Table 3. 2004 Moose Kill (Percent Success) by WMD, Season, and Permit Type**

WMD	September			October			2004 Total
	BOP	AOP	Total	BOP	AOP	Total	
6	144 (87%)	54 (82%)	198 (86%)	46 (83%)	163 (82%)	209 (82%)	407 (84%)
11	86 (72%)	15 (50%)	101 (67%)	26 (65%)	49 (54%)	75 (58%)	176 (63%)

### Western Maine Activities

Use of wide striping was continued along Rt. 4 in Phillips during 2004. The purposes of the wider striping are twofold. First, the wider striping provides a visual break for drivers when a moose or deer is straddling the line. Second, wide striping is thought to give the driver the illusion of a narrower roadway, thereby causing the driver to slow down allowing for more reaction time to avoid a collision. Studies to determine the effectiveness of this collision deterrent were not conducted in 2004. However, results of effectiveness studies along Rt. 4 from 2003 indicate that drivers did not decrease their speeds when wider striping was present. Figure 2 shows a section of Rt.4 with the wider striping.

### Moosehead Lake Region

Wide striping and the installation of Temporary Optical Markers (TOMs) was continued along Rt. 6/15 in the town of Shirley in 2004. TOMs are small yellow reflective tags which are typically used as a substitute for striping during roadway construction activities. Results of these collision deterrents are pending analysis of data.

## **2.0 Scheduled Activities for 2005**

Two upcoming MaineDOT highway rebuild projects along Rt. 4 will have moose collision reduction designs implemented. The first project, located in Phillips, is scheduled for construction in 2005 and includes the following design features:

- In areas of High Crash Locations, the shoulder is designed with a 3:1 slope in order to increase roadside visibility.
- In areas of High Crash Locations, moose “speed bumps” will be installed along the toe of slope. These bumps will consist of a strip of angular riprap, approximately 4-8 feet wide, and at a site-specific length, installed with the intent to slow down any moose that may be running onto the roadway, allowing the driver greater reaction time. The speed bumps are not a barrier to moose and are not intended to prevent the animals from entering the roadway.
- Wide striping (shoulder and centerline)

The second upcoming highway rebuild project is located in Madrid. This project is currently in the design stage and is slated for construction in the 2007 season. The conceptual design is similar to the Phillips rebuild project and is as follows:

- In areas of High Moose Crash Locations, the shoulder is designed as a 3:1 slope in order to increase roadside visibility
- In areas of High Moose Crash Locations, moose “speed bumps” will be installed along the toe of slope.

Several highway projects are scheduled for northern Maine in 2005. These include rebuilds or repaving of Rt. 11 in Portage, Rt. 161 near Cross Lake; and Rt. 163 in Castle Hill. The scopes of these projects are currently being reviewed for implementation of vehicle-activated signage, moose speed bumps, wider clearing of roadside vegetation, and reflector systems.

In addition, for the third year MDIFW will sustain increased moose harvest permits for Wildlife Management Districts 6 and 11, both of which are located in Aroostook County, with the intent to reduce the number of moose vehicle collisions.